

A quick guide for evaluating classroom content and practice

In grade 8, instructional time should focus on three critical areas:

1.

Formulating and reasoning about expressions and equations, including modeling an association in bivariate data with a linear equation, and solving linear equations and systems of linear equations (EE)

2.

Grasping the concept of a function and using functions to describe quantitative relationships (F)

3.

Analyzing two- and three-dimensional space and figures using distance, angle, similarity, and congruence, and understanding and applying the Pythagorean Theorem (G)

In an 8th grade math class you should observe students engaged in at least one of the following:

Content Standards

The Number System (NS)

- Know that there are numbers that are not rational and approximate them by rational numbers

Expressions and Equations (EE)

- Work with radicals and integer exponents
- Understand the connections between proportional relationships, lines, and linear equations
- Analyze and solve linear equations and pairs of simultaneous linear equations.

Statistics and Probability (SP)

- Investigate patterns of association in bivariate data

Functions (F)

- Define, evaluate, and compare functions
- Use functions to model relationships between quantities

Geometry (G)

- Understand congruence and similarity using physical models, transparencies, or geometry software
- Understand and apply the Pythagorean Theorem
- Solve real-world and mathematical problems involving volume of cylinders, cones and spheres

Mathematical Practices

- Making sense of problems and persevering in solving them
- Reasoning abstractly and quantitatively
- Constructing viable arguments and critiquing the reasoning of others
- Modeling with mathematics
- Using appropriate tools strategically
- Attending to precision
- Looking for and making use of structure
- Looking for and expressing regularity in repeated reasoning

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Mathematics What to Look For Guide

The practices below, which are aligned to the MA Model Teacher Rubric, should be evident in planning and instruction. Any particular lesson will demonstrate some of the practices, not all. For each lesson, artifacts or observables might include: lesson plan, tasks and assessments, teacher instruction, student discussion and behavior, or student work.

Standard I: Curriculum, Planning, and Assessment (I-A, I-B)

- The lesson focuses on grade-level cluster(s), content standard(s), or part(s) thereof.
- The lesson intentionally targets the aspect(s) of rigor (conceptual understanding, procedural skill and fluency, and application) called for by the content and practice standard(s) being addressed.
- The lesson includes clear explanations, representations, and/or examples to make the mathematics of the lesson explicit.
- The lesson intentionally relates new learning to students' prior skills and knowledge.
- The lesson includes opportunities to monitor learning throughout the lesson (such as through questioning or performance on short problems).

Standard II: Teaching all Students (II-A)

- The teacher poses high quality questions and problems, and provides time for students to develop and communicate their thinking about the content of the lesson.
- The teacher uses variation in students' ideas and solution methods to strengthen other students' understanding.
- The teacher addresses student variability and diverse needs (including English language learners and students with disabilities) to ensure equitable access to the lesson and achievement of the standard(s).
- The teacher guides student thinking toward the focus of the lesson and references student work and discussion to summarize the mathematics learned.

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